PATENT
Docket No. H 3185 PCT/US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of
Bernd Fabry

Serial No. 09/554,387 Examiner: Shaojia A. Jiang, Ph.D
Filed: 06/29/00 Art Unit: 1617
TITLE: HYPOCHOLESTEREMIC PREPARATIONS CONTAINING MIXTURES OF PHYTOSTENOL(ESTER)S AND CONJUGATED FATTY ACIDS, AND METHODS OF USING THE SAME

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on 3-24-03.

March 24, 2003
Date

Rose A. Stowe
Signature of certifier

Rose A. Stowe
Typed or printed name of certifier

APPEAL BRIEF TRANSMITTAL

Commissioner for Patents
Washington, DC 20231

Sir:

Appellants' appeal brief, in triplicate, is transmitted herewith in accordance with 37 CFR 1.192.

Please charge the required fee of $320.00 to our Deposit Account No. 50-1177. This paper is enclosed in triplicate. Order No. 03-0152.

The Commissioner is hereby authorized to charge any deficiency in the required fee or to credit any overpayment to Deposit Account 50-1177.

Respectfully submitted,

March 24, 2003
Date

Aaron R. Ettelman
(Reg. No. 42,516)
Attorney for Applicant(s)
(610) 278-4930

Cognis Corporation, Patent Dept.
2500 Renaissance Boulevard, Suite 200
Gulph Mills, PA 19406

ARE/ras

G:\H3185.TAB.DOC

1 of 3

PATENT

#33
HKD
4-9-03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re:	Patent Application of Bernd Fabry	: Group Art Unit: 1617
Appln. No.:	09/554,387	: Examiner: Shaojia A. Jiang, Ph.D.
Filed:	June 29, 2000	:
For:	HYPOCHOLESTEREMIC PREPARATIONS CONTAINING MIXTURES OF PHYTO-STENOL(ESTER)S AND CONJUGATED FATTY ACIDS, AND METHODS OF USING THE SAME	: Attorney Docket No.: **H 3185 US**

APPELLANT'S BRIEF ON APPEAL UNDER 37 C.F.R. §1.192

Pursuant to the Notice of Appeal filed on October 22, 2002, via facsimile, and received by the U.S. Patent & Trademark Office on the same date, Appellant submits herewith a Brief On Appeal under 37 C.F.R. §1.192, appealing the Examiner's final rejection of pending claims 11-30, as set forth in the final Office Action dated April 22, 2002 (Paper No. 16), as maintained in the Advisory Action dated September 20, 2002 (Paper No. 19). This Brief On Appeal is being timely filed as a Petition for a three-month extension of time, up to and including March 24, 2003 (March 22, 2003 being a Saturday), including an authorization to charge fees, is being submitted herewith.

Appellant respectfully requests consideration by the honorable Board of Patent Appeals and Interferences and reversal of the Examiner's rejection of all pending claims based on the arguments set forth in the attached brief.

TABLE OF CONTENTS

Table of Contents 2

Real Party in Interest 3

Related Appeals and Interferences 3

Status of the Claims 3

Status of Amendments 3

Summary of Invention 4

Issues 6

Grouping of the Claims 6

Argument 6

I. The Examiner's Rejection Under 35 U.S.C. §103(a) is Improper 6
   A. The Rejection Under §103(a) Over Miettinen in View of Leaf 6
   B. Appellants' Traversal 7
   C. Requirements for Establishing *Prima Facie* Obviousness 7
   D. Cited References Fail to Teach or Suggest Conjugated Fatty Acids 8
   E. Lack of Prima Facie Obviousness 11

II. Indicia of Non-Obviousness 12
   A. Appellant's Showing of Significantly Improved Results 12
   B. Examiner's Rebuttal in Paper No. 16 & 19 13
   C. Law Pertaining to Indicia of Non-Obviousness 14
   D. Sufficiency of Appellant's Showing 14

Conclusion 15

Appendix A - Claims on Appeal A-1

REAL PARTY IN INTEREST

The real party in interest in the instant appeal is Cognis Deutschland GmbH & Co. KG, a German company having a place of business at Henkelstraße 67, 40589 Düsseldorf, Germany.

RELATED APPEALS AND INTERFERENCES

Appellant is not aware of any related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the instant appeal.

STATUS OF THE CLAIMS

Claims 11-30 are pending in the instant application on appeal. All of the pending claims are the subject of the instant appeal.

Claims 11-30 stand finally rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Pat. No. 3,865,939 of Jandacek ("Jandacek") and Chemical Abstract No. 100:208354 of Hasegawa, synonymously identified and cited as "XP-002099834", (hereinafter referred to as "Hasegawa"), in view of European Patent Application No. EP 0594612 of Miettinen, *et al.* ("Miettinen") and U.S. Pat. No. 5,277,910 of Hidvégi ("Hidvégi"), for the reasons of record set forth in the final Office Action dated April 22, 2002 (Paper No. 16).

STATUS OF AMENDMENTS

No amendments have been filed in the instant application on appeal subsequent to the Examiner's final rejection of claims 11-30. Appellant's Request for Reconsideration After Final, filed on August 21, 2002 ("the Request for Reconsideration After Final"), has been considered but was not deemed to place the instant application in a condition for allowance, as indicated in Paper No. 19. An appendix containing a copy of the claims involved in the appeal, in accordance with 37 C.F.R. §1.192(c)(9), is attached as Appendix A.

SUMMARY OF THE INVENTION

Appellant has surprisingly discovered that a mixture of (a) a phytostenol or phytostenol ester component and (b) a *conjugated* fatty acid component exhibits significantly better cholesterol-reducing activity than either component used alone, and that the mixtures exhibit synergistic cholesterol-reducing effects. (*See,* Appellant's Specification, p. 2, lines 25-29). Accordingly, Appellant's claimed invention is directed to mixtures for the reduction of cholesterol content in the blood of a mammal, (*e.g.*, a human), as well as methods of reducing cholesterol content in the blood by administering such mixtures to a mammal. Appellant's invention is a significant and unexpected improvement over the prior art.

One embodiment of Appellant's claimed invention is directed to hypocholesteremic preparations comprising: at least one component (a) selected from the group consisting of phytostenols and phytostenol esters; *and* at least one component (b) selected from *conjugated* fatty acids having from about 6 to about 24 carbon atoms and glycerides of *conjugated* fatty acids having from about 6 to about 24 carbon atoms. Another aspect of Appellant's claimed invention is directed to methods of reducing serum cholesterol content in a mammal comprising administering such a preparation to a mammal in an amount effective to reduce serum cholesterol content in the mammal. (*See,* Claims 11-30, set forth in Appendix A).

As discussed in Appellant's Specification, a known prior art disadvantage associated with the incorporation of phytostenol esters into foodstuffs, is that the esters may only be included in small amounts. (*See, e.g.*, Appellant's Specification, p. 2, lines 3-7). Otherwise there is the danger that they will negatively impact the taste and/or the consistency of the foodstuffs. (*See, id.*). However, as further noted in Appellant's Specification, it is desirable to attain greater cholesterol-reducing effects, in reduced periods of time. (*See, id.*, at 7-10).

As described above, hypocholesteremic preparations, and methods for their use, in accordance with Appellant's claimed invention surprisingly exhibit significantly improved cholesterol-reducing activity over larger amounts of phytostenol compounds or conjugated fatty acids used alone. Appellant's Examples show that a mixture of a phytostenol component in an amount of 5% by weight with a conjugated fatty acid component in an amount of 5% by weight reduces cholesterol levels in the blood significantly better than 10% of any one component alone.

(*See,* Appellant's Specification, pp. 8-9, Table 1). It is a significant advantage to use a smaller amount of a mixture having such increased activities when preparing foodstuffs, where increased concentration of additives, such a phytostenol(ester)s, can negatively affect the taste and/or other aesthetic properties of the foodstuff.

More specifically, as evidenced by the Examples set forth in Appellants' Specification, after 48 hours from ingestion, a conjugated fatty acid used alone reduced serum cholesterol levels in laboratory animal specimens to 60% relative to the initial level and phytostenols and phytostenol esters used alone reduced serum cholesterol levels in laboratory animal specimens to 35% relative to the initial level, whereas after the same time period, half the amount of phytostenols and phytostenol esters in combination with half the amount of conjugated fatty acid reduced serum cholesterol levels to an average of 21.5% relative to the initial level. (*See,* Appellant's Specification, pp. 8-9, Table 1).

It should be noted in considering Appellant's Examples that the data represents the reduction of cholesterol relative to an initial 100%. Thus, a measurement of zero would indicate absolute removal of all blood cholesterol. In other words, lower numbers represent more removal of cholesterol and are better. What should also be clearly understood, is that the removal of each additional amount of cholesterol becomes more difficult like any separation, for example reduction from 50% relative to initial level down to 49% relative to the initial level is more easily attained than reduction from 40% relative to initial levels down to 39% relative to the initial level. This understanding is essential when considering the combined effect of the claimed components. If one were to assume a linear reduction relationship, the reduction by one component of about 40% and another by 65%, would produce the conclusion that their combination must achieve 105% reduction. Clearly, such a result is not possible. However, recognizing that the reduction becomes increasingly more difficult as the remaining relative amount of cholesterol in the blood decreases, it is apparent that reduction from 30% to 20% is much more significant that from 40% to 30%.

ISSUES

(1) Does a prior art recitation of fatty acids, including unsaturated fatty acids, fail to a teach or a suggest a *conjugated* fatty acid?

(2) Does the combination of the four cited references fail to teach or suggest a hypocholesteremic preparation comprising; (i) a phytostenol or phytostenol ester, and (ii) a *conjugated* fatty acid or *conjugated* fatty acid ester having from 6 to 24 carbon atoms, and a method of reducing serum cholesterol content via the administration of such a preparation?

(3) Even if it were assumed for argument's sake that a *prima facie* case of obviousness had been established based upon the cited references, does Appellant's showing of significantly improved results and synergistic effects overcome such a *prima face* case of obviousness?

GROUPING OF THE CLAIMS

All of the pending claims stand or fall together for the purposes of the instant appeal.

ARGUMENT

I. *The Examiner's Rejection Under 35 U.S.C. §103(a) is Improper*

A. *The Rejection of Claims 11-30 Over Jandacek, etc.*

In Paper No. 16, the Examiner maintains the rejection of claims 11- 30 under 35 U.S.C. §103(a), as being unpatentable over Jandacek and Hasegawa, in view of Miettinen and Hidvégi, for the reasons of record set forth in the Office Action dated August 29, 2001 (Paper No. 12). In Paper No. 16, the Examiner makes the rejection final.

The Examiner insists that the use of a conjugated fatty acid, as claimed, is suggested by the prior art, and that one of ordinary skill in the art would have reasonably expected the combination of a phytosterol and a conjugated fatty acid to result in an improved therapeutic effect. (*See, e.g.,* Paper No. 16, p. 3). Additionally, the Examiner contends that Applicant's rebuttal of the alleged *prima facie* case of obviousness, supported by evidence showing significantly improved results as compared to the prior art, is not persuasive.

The Examiner continues to insist that a disclosure of unsaturated fatty acids "include[es] any conjugated fatty acids . . .." (*See, id.*). The Examiner points out, in apparent support of the preceding contention, that Miettinen discloses the use of fatty acid esters which may have up to three double bonds. (*See, id.*).

In Paper No. 19, the Examiner continues to argue that the prior art disclosure of unsaturated fatty acids includes a teaching of conjugated fatty acids. Moreover, the Examiner incorrectly maintains that Appellant's data "merely demonstrate less than additive therapeutic effects . . .." (*See,* Paper No. 19, p. 3 (*emphasis in original*)). This conclusion is INCORRECT, as explained below in detail in Section II.

B. *Appellants' Traversal*

Appellant respectfully traversed the Examiner's rejection in the Request for Reconsideration After Final, and initially in Appellant's Request for Reconsideration, filed on January 29, 2002, in response to the Office Action mailed August 29, 2001 (Paper No. 12)

Appellant again strenuously, but respectfully, traverses the Examiner's rejection and the contentions and arguments in support thereof, for the reasons set forth below.

C. *Requirements for Establishing Prima Facie Obviousness*

It is well-settled that in order for an Examiner to establish a *prima facie* case of obviousness, and thus shift the burden of proving non-obviousness onto the Appellant, the Examiner must show all of the following three criteria: (1) there must be some suggestion or motivation to modify or combine the references as suggested by the Examiner (it is not sufficient to say that the cited references can be combined or modified without a teaching in the prior art to suggest the desirability of the modification); (2) there must also be a reasonable expectation of success; and (3) the references as combined must collectively teach or suggest all limitations of the claims. The teaching or suggestion to combine and modify the cited art and the reasonable expectation of success must both be found in the prior art and not in the Applicant's Specification. (M.P.E.P. §2143).

D. *Cited References Fail to Teach or Suggest Conjugated Fatty Acids*

It is well-known that the term "conjugated", when referring to chemical bonds, means two or more double bonds with alternating single bonds, for example;

-CH=CH-CH=CH-CH=CH-.

Conjugation is a subset of polyunsaturation. All conjugated compounds are polyunsaturated, but NOT all polyunsaturated compounds are conjugated. To the contrary, most polyunsaturated compounds are NOT conjugated. Moreover, most polyunsaturated compounds in nature are not conjugated. For example, linoleic acid which occurs frequently in nature is well known to be 9,12-octadecadienoic acid, the "9,12" designation indicating the position of the two double bonds in the 18 carbon acid. To obtain conjugated linoleic acid, one needs to employ chemical and/or bacterial processes to isomerize the acid. While conjugated linoleic acid does occur naturally in the meat and milk of cows and some other ruminary animals, it does not occur naturally in vegetable oils, such as rapeseed oil. (*See, e.g.*, Swern, Daniel, (Ed.), Bailey's Industrial Oil and Fat Products, 4th ed., Vol. 1, pp. 416, (1979), (a copy of which was attached to Appellant's Request for Reconsideration After Final).

(i) The Teachings of Jandacek:

The Examiner continues to argue that "Jandacek teaches broadly the usefulness of phytosterols such a β-sitostenol along with saturated and unsaturated fatty acids having form 6 to 18 carbon atoms including any conjugated fatty acids having from 6 to 18 carbon atoms, e.g., conjugated linoleic acid, in the instant claimed method." (*See,* Paper No. 19, p. 2; Paper No. 16, p. 3 (*emphasis in originals*)). THE EXAMINER'S STATEMENT IS INCORRECT. JANDACEK DOES NOT TEACH OR SUGGEST THE USE OF CONJUGATED FATTY ACIDS IN CONJUNCTION WITH PHYTOSTENOLS TO LOWER SERUM CHOLESTEROL. JANDACEK DOES NOT MENTION CONJUGATION.

Jandacek discloses the use of a steroid solubilizing agent in conjunction with phytosterols for the reduction of cholesterol levels. (*See,* Jandacek, col. 2, lines 1-5). Jandacek is directed to increasing the solubility of phytosterols in edible oils, and in an effort to increase the solubility of a phytosterol in an edible oil, Jandacek teaches the use of a steroid solubilizing agent which may be selected from "free fatty acids, fatty acids esters and alkanols." (*See,*

Jandacek, abstract). Jandacek does not teach the use of fatty acids *per se* to lower cholesterol levels. In fact, Jandacek does NOT associate any hypocholesterolemic effect with the fatty acids taught therein. *Moreover, Jandacek does not teach the use of any polyunsaturated acids, let alone conjugated acids.* There is no teaching or suggestion in Jandacek that the solubility of a phytosterol in an edible oil could be increased by the incorporation of a *conjugated* fatty acid, and thus there is no motivation to modify its teachings in such a way, as suggested by the Examiner.

(ii) The Teachings of Miettinen:

The Examiner also insists that Miettinen "teaches broadly the usefulness of fatty acids esters of β-sitosterol (β-sitostenol) and β-sitostanol containing approx. 2-22 carbon atoms and up to about 3 double bonds in the instant claimed method . . .." (*See,* Paper No. 19, p. 2; Paper No. 16, p. 3 (*emphasis in originals*)). The Examiner contends that Miettinen discloses the use of fatty acid ester mixtures based upon rapeseed oil, and that "it is well known that rapeseed oil contains about 90% unsaturated fatty acids having one or more double bonds." (*See, id.*). AGAIN, THE EXAMINER'S STATEMENTS ARE UNTRUE. MIETTINEN DOES NOT TEACH OR SUGGEST THE USE OF FATTY ACIDS HAVING 'UP TO ABOUT THREE DOUBLE BONDS' IN A MIXTURE WITH A PHYTOSTENOL COMPOUND.

The precise language of the portion of Miettinen cited by the Examiner in Paper No. 12, in support of the proposition that the reference teaches esters of fatty acids containing approx. 2-22 carbon atoms and up to about 3 double bonds, namely page 3, lines 42-45, reads in pertinent part as follows:

> . . . [a phytostanol] is esterified with different fatty acid ester mixtures by a commonly known chemical interesterification technique. A methyl ester mixture of the fatty acids of any vegetable oil can be used in the reaction. One example is a rapeseed oil based methyl ester, but any fatty acids which contain approx. 2-22 carbon atoms are usable.
>
> (Miettinen, page 3, lines 42-45 (*citations omitted*)).

Miettinen contains no teaching or suggestion to use conjugated acids to esterify phytostenols, let alone to use conjugated acids in a mixture with phytostenol compounds.

Miettinen does not even specifically recite the usage of polyunsaturated acids. The Examiner has extrapolated the mention of rapeseed oil, which does in fact contain some amounts of NON-CONJUGATED, polyunsaturated acids, into an alleged teaching of conjugated fatty acids. Most rapeseed oils contain some small amount of linolenic acid which has three NON-CONJUGATED double bonds. Linolenic acid is known to be 9,12,15-octadecatrienoic acid, *i.e.*, unconjugated. However, teaching esterification with fatty acid ester mixtures based upon vegetable oils, including an oil which may contain some acids having three double bonds, is not equivalent to a teaching to use specific fatty acids having certain numbers of double bonds, or specific fatty acids having conjugated double bonds. Moreover, Miettinen is directed to phytosterol ESTERS, not a mixture of a phytosterol and a conjugated fatty acid.

While the Examiner is correct that it is known that rapeseed oil contains about 90% unsaturated fatty acids, it should also be noted that rapeseed oils (and most vegetable oils in general) are NOT known to contain CONJUGATED fatty acids. As can be seen in a comparison of most common rapeseed oils from various origins, the only polyunsaturated acids present in the oil are NON-CONJUGATED (*i.e.*, linoleic, docosadienoic and linolenic). (*See, e.g.*, Swern, Daniel, (Ed.), Bailey's Industrial Oil and Fat Products, 4th ed., Vol. 1, pp. 416, (1979). It is also known that the only common vegetable sources of conjugated acid oils are tung oil and oiticica oil. (*See, e.g., id.* at p. 286).

(iii) The Teachings of Hasegawa:

The Examiner argues that Hasegawa provides "further motivation for the instant method." (*See,* Paper No. 16, p.3). The Examiner contends that Hasegawa teaches linoleic acid as being useful for lowering serum cholesterol.

Hasegawa contains no teaching or suggestion that would motivate one of ordinary skill in the art to modify its teachings to include a conjugated fatty acid along with a phytostenol compound.

(iv) The Teachings of Hidvégi:

Hidvégi does not teach or suggest the use of conjugated fatty acids for the reduction of serum cholesterol, and the Examiner has not contended otherwise.

E. Lack of Prima Facie Obviousness:

The Examiner acknowledges that neither Jandacek, nor Hasegawa, teaches the use of phytosterols and *conjugated* fatty acids for lowering serum cholesterol levels. (*See,* Paper No. 12, page 4). However, the Examiner maintains that the cited references suggest the use of a conjugated fatty acid. Applicant respectfully disagrees. As set forth above, none of the four references teaches *conjugated* fatty acids. None of the four references teaches a component which contains conjugated fatty acids. There is no suggestion to use conjugated fatty acids in a mixture with a phytostenol compound.

Even if the Examiner were to maintain that the broad recitation of "fatty acids", including unsaturated fatty acids, somehow includes a teaching or suggestion of conjugated fatty acids, the cited references would still fail to satisfy the necessary criteria for *prima facie* obviousness as none of the four references contains a teaching or suggestions which would motivate one of ordinary skill in the art to modify the teachings of the references to use a conjugated fatty acid.

IT IS EXTREMELY WELL-SETTLED THAT THE FACT THAT A REFERENCE CAN BE MODIFIED IS INSUFFICIENT WITHOUT A TEACHING OR SUGGESTION IN THE PRIOR ART AS TO THE DESIRABILITY OF THE MODIFICATION. (*See,* M.P.E.P. §2143). Given the lack of any teaching or suggestion to use or include conjugated fatty acids, it is difficult to imagine that the cited references suggest the desirability of making such a modification to their teachings.

Finally, one of ordinary skill in the art would NOT have a reasonable expectation of success *based upon the cited references*. The Examiner has argued that one of ordinary skill in the art would find a reasonable expectation of success because it would have been "reasonably expected that combining a phytosterol and . . . a conjugated fatty acid . . . known useful for the same purpose . . . would improve the therapeutic effect . . .." (*See,* Paper No. 16, page 3). THE PRIOR ART DOES NOT TEACH THE TWO CLAIMED COMPONENTS AS BEING USEFUL FOR THE SAME PURPOSE. THE EXAMINER HAS ARGUED THAT THE PRIOR ART SUGGESTS ONE OF THE COMPONENTS. HOWEVER, THE PRIOR ART DOES NOT TEACH CONJUGATED FATTY ACIDS, AND NO MOTIVATION TO MODIFY

THE TEACHINGS TO USE CONJUGATED FATTY ACIDS IS PRESENT IN THE CITED REFERENCES. THUS, THE CLAIMED INVENTION IS NOT SIMPLY THE COMBINATION OF TWO COMPONENTS KNOWN FOR THE SAME PURPOSE.

Accordingly, Appellant submits that the Examiner has failed to establish a *prima facie* case of obviousness, as none of the three criteria necessary to establish a *prima facie* case of obviousness has been satisfied. Thus, Appellant respectfully requests reversal of the Examiner by the Honorable Board and withdrawal of the rejection under 35 U.S.C. §103(a).

II. *Indicia of Non-Obviousness*

A. *Appellant's Showing of Significantly Improved Results*

Finally, even if it were assumed, for argument's sake, that a *prima facie* case of obviousness could be established based upon the cited references, which it cannot, any such alleged *prima facie* case of obviousness would be overcome by Appellant's showing of synergism between the phytostenol(ester)s and the conjugated fatty acids and the unexpected, significantly improved results of the claimed preparations compared to the prior art.

Appellant respectfully submits that the combination of phytostenol(ester)s and conjugated fatty acids in accordance with Appellant's invention perform better than either component alone in reducing serum cholesterol levels. This is clearly evidenced by the Examples set forth in Appellant's Specification, beginning at page 8, line 17. As can be seen from Table 1, at page 9, the combinations decrease the serum cholesterol levels in amounts greater than either component alone. The Examiner has argued that the data shows less than additive therapeutic effects. APPLICANT RESPECTFULLY SUBMITS THAT THE EXAMINER IS INCORRECT. Example C5 shows the effect of 10% by weight of conjugated linoleic acid alone. After 48 hours, the "% rel." of radio-labeled cholesterol is 60% (a greater decrease from 100% is BETTER). Example C1 shows the effect of 10% by weight of β-sitostenol alone. After 48 hours, the "% rel." of radio-labeled cholesterol is 35%. HOWEVER, as shown in Example 1, half the amount of β-sitostenol (5% by weight) and half the amount of conjugated linoleic acid (5% by weight), in combination, result in a "% rel." of radio-labeled cholesterol of 23%. The Examiner is incorrect to argue that because Example C5 results in a

40% decrease, and Example C1 results in a 65% decrease, that the 77% decrease of Example 1 is less than additive. Such logic would require a relative reduction of greater than 105%. Additionally, as mentioned previously, as is the case with most "purifications" or "removals", the removal of each additional amount of an undesired impurity (*i.e.*, cholesterol) is progressively more difficult.

Applicant submits that a 77% relative reduction using half the amounts of a phytostenol and a conjugated fatty acid, compared to a 40% relative reduction and a 65% relative reduction using twice the amount of either material alone, is evidence of both a synergistic effect associated with the combination and a significant improvement over prior art hypocholesteremic preparations.

This significant improvement is surprising as noted in the Specification. Appellant's Specification specifically states:

> Surprisingly, it has been found that mixtures of phytostenols or phytostenol esters with conjugated fatty acids or fatty acid glycerides synergistically cause the reduction of the cholesterol content in the blood serum..
> (*See,* Appellant's Specification, page 2, lines 25-29).

It is submitted that Appellant's showing of synergism, and unexpected and improved results sufficiently rebuts any alleged *prima facie* case of obviousness. Accordingly, Appellant respectfully requests that the Honorable Board withdrawal of all rejections under 35 U.S.C. §103(a) is respectfully requested.

B. *Examiner's Rebuttal in Paper Nos. 16 & 19*

In Paper No. 16, the Examiner argued "that lauric acid in lauric acid β-sitostanol ester or lauric acid β-sitostenol ester employed in the testing herein is not even an unsaturated carboxylic acid, which is not a conjugated fatty acid [and t]hus, these two compounds are not within the scope of the claimed invention" (*See,* Paper No. 16, page 4). Based upon this argument, the Examiner had contended that the results shown for the combination of a lauric acid ester of β-sitostenol or β-sitostanol and conjugated linoleic acid "[are] not deemed relevant." (*See, id.*).

Appellant brought to the Examiner's attention the fact that the lauric acid sitostenol **esters** listed in table 1 are **phytostenol esters** and their combination as a mixture with conjugated linoleic acid is most certainly within the scope of the present invention.

In Paper No. 19, the Examiner argues that Appellant has presented no side-by-side comparison with the prior art.

On these bases, the Examiner maintains that Appellant's showing is insufficient.

C. *Law Pertaining to Indicia of Non-Obviousness*

To begin with, the Federal Circuit has held that "the PTO must consider comparative data in the specification in determining whether the claimed invention provides unexpected results." (*In re Soni*, 34 USPQ.2d 1684, 1687 (Fed. Cir. 1995), citing *In re Margolis*, 228 USPQ 940 (Fed. Cir. 1986)). The Federal Circuit also held that, "when an applicant demonstrates *substantially* improved results, . . ., and *states* that the results were *unexpected*, this should suffice to establish unexpected results *in the absence of* evidence to the contrary." (*Soni*, at 1688 (*emphasis in original*)).

Secondly, with respect to the type of showing necessary, Appellant respectfully submits, that Section 716 of the M.P.E.P does **not** require the submission of a "side-by-side" comparison in order to successfully establish unexpected results. Appellant respectfully submits, that section 716.02(e) simply outlines one requirement of a Declaration under 37 C.F.R. §1.132, namely that such a declaration compare the claimed subject matter with the closest prior art available. There is no requirement for a Declaration.

However, section 716.02(b), which is more specifically related to the burden of proof concerning allegations of unexpected results, clearly indicates that both direct and *indirect* comparisons with the prior art may be made.

D. *Sufficiency of Appellant's Showing*

Regardless of the correctness of the Examiner's contention that §716.02(e) of the M.P.E.P. requires a side-by-side comparison, and contrary to the Examiner's assertion that Appellant failed to set forth a side-by-side comparison, Appellant respectfully submits that the

comparative data set forth in the Specification is a sufficient comparison of the invention and the closest prior art available.

Specifically, Appellant compares combinations of a phytostenol(ester) component and a conjugated fatty acid component (Examples 1-5) with either a phytostenol(ester) component or a conjugated fatty acid component (Comparative Examples C1-C5).

Thus, Appellant specifically submits that the comparative data most certainly compares the claimed mixtures with the prior art components. Furthermore, the comparative data need not be present in the form of a Declaration. Data set forth in the Specification must be considered. Finally, the significant improvement shown in the Examples is identified in the Specification as being unexpected.

Accordingly, it is submitted that Appellant's showing of synergism and unexpected and improved results sufficiently rebuts any alleged *prima facie* case of obviousness. Appellant submits that significantly improved results shown by direct comparison, as set forth in the Specification, along with Appellant's statement that such improved results are unexpected, satisfy the required burden under Section 716.02(b) of the M.P.E.P. and *Soni*, absent evidence to the contrary.

CONCLUSION

In view of the arguments set forth above, Appellant submits that the Examiner's rejection under 35 U.S.C. §103(a) is improper, that the Examiner has failed to establish a *prima facie* case of obviousness, that any alleged *prima facie* case of obviousness is sufficiently rebutted by Appellant's showing of synergism and significantly improved results, and that all claims on appeal patentably distinguish over the prior art of record and known to Appellant, either alone or in combination. Accordingly, Appellant respectfully requests that the Board find for Appellant and reverse the Examiner's final rejection.

Respectfully submitted,

BERND FABRY

March 24, 2003 By: _____
(Date)

AARON R. ETTELMAN
Registration No. 42,516
COGNIS CORPORATION
2500 Renaissance Blvd., Suite 200
Gulph Mills, PA 19046
Telephone: (610) 278-4930
Facsimile: (215) 278-4971
E-Mail: AARON.ETTELMAN@COGNIS-US.COM

ARE:are

APPENDIX A

Claims On Appeal:

1. CANCELED
2. CANCELED
3. CANCELED
4. CANCELED
5. CANCELED
6. CANCELED
7. CANCELED
8. CANCELED
9. CANCELED
10. CANCELED

11. A method of reducing serum cholesterol content in a mammal, said method comprising:

(i) providing a hypocholesteremic preparation comprising at least one component (a) selected from the group consisting of phytostenols and phytostenol esters and at least one component (b) selected from conjugated fatty acids having from about 6 to about 24 carbon atoms and glycerides of conjugated fatty acids having from about 6 to about 24 carbon atoms; and

(ii) administering the hypocholesteremic preparation to a mammal in an amount effective to reduce serum cholesterol content in the mammal.

12. The method according to claim 11, wherein the at least one component (a) is selected from the group consisting of β-sitostenol, β-sitostanol, and esters thereof.

13. The method according to claim 11, wherein the at least one component (a) comprises a carboxylic acid ester of a phytostenol, the carboxylic acid being of the general formula (I):

$$R^1CO\text{-}OH \quad (I)$$

wherein R^1CO represents an acyl radical having from about 2 to about 22 carbon atoms and up to about 3 carbon-carbon double bonds.

14. The method according to claim 12, wherein the at least one component (a) comprises a carboxylic acid ester of β-sitostenol or β-sitostanol, the carboxylic acid being of the general formula (I):

$$R^1CO\text{-}OH \quad (I)$$

wherein R^1CO represents an acyl radical having from about 2 to about 22 carbon atoms and up to about 3 carbon-carbon double bonds.

15. The method according to claim 13, wherein the carboxylic acid has from about 12 to about 18 carbon atoms.

16. The method according to claim 14, wherein the carboxylic acid has from about 12 to about 18 carbon atoms.

17. The method according to claim 11, wherein the at least one component (b) comprises conjugated linoleic acid.

18. The method according to claim 11, wherein the hypocholesteremic preparation is encapsulated in gelatin, whereby a gelatin capsule is provided, prior to administering the preparation to the mammal.

19. The method according to claim 18, wherein the at least one component (a) and the at least one component (b) are each independently present in an

amount of from about 0.1 to about 50% by weight, based on the total weight of the gelatin capsule.

20. The method according to claim 11, wherein the hypocholesteremic preparation is combined with a foodstuff prior to administering the preparation to the mammal.

21. A hypocholesteremic preparation comprising at least one component (a) selected from the group consisting of phytostenols and phytostenol esters and at least one component (b) selected from conjugated fatty acids having from about 6 to about 24 carbon atoms and glycerides of conjugated fatty acids having from about 6 to about 24 carbon atoms.

22. The hypocholesteremic preparation according to claim 21, wherein the at least one component (a) is selected from the group consisting of β-sitostenol, β-sitostanol, and esters thereof.

23. The hypocholesteremic preparation according to claim 21, wherein the at least one component (a) comprises a carboxylic acid ester of a phytostenol, the carboxylic acid being of the general formula (I):

$$R^1CO\text{-}OH \quad (I)$$

wherein R^1CO represents an acyl radical having from about 2 to about 22 carbon atoms and up to about 3 carbon-carbon double bonds.

24. The hypocholesteremic preparation according to claim 22, wherein the at least one component (a) comprises a carboxylic acid ester of β-sitostenol or β-sitostanol, the carboxylic acid being of the general formula (I):

$$R^1CO\text{-}OH \quad (I)$$

wherein R^1CO represents an acyl radical having from about 2 to about 22 carbon atoms and up to about 3 carbon-carbon double bonds.

25. The hypocholesteremic preparation according to claim 23, wherein the carboxylic acid has from about 12 to about 18 carbon atoms.

26. The hypocholesteremic preparation according to claim 24, wherein the carboxylic acid has from about 12 to about 18 carbon atoms.

27. The hypocholesteremic preparation according to claim 21, wherein the at least one component (b) comprises conjugated linoleic acid.

28. The hypocholesteremic preparation according to claim 21, wherein the preparation is encapsulated in gelatin, in order to form a gelatin capsule.

29. The hypocholesteremic preparation according to claim 28, wherein the at least one component (a) and the at least one component (b) are each independently present in an amount of from about 0.1 to about 50% by weight, based on the total weight of the gelatin capsule.

30. The hypocholesteremic preparation according to claim 21, wherein the hypocholesteremic preparation is combined with a foodstuff.